



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/638,422	08/12/2003	Ching-Jung Chu	CHUC3005/EM	5196
23364 7590 05/03/2007 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			EXAMINER SUTHERS, DOUGLAS JOHN	
			ART UNIT 2615	PAPER NUMBER
			MAIL DATE 05/03/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/638,422

Applicant(s)

CHU ET AL.

Examiner

Douglas Suthers

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2615

### **DETAILED ACTION**

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615.

### ***Specification***

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Line 12 of claim 1 states "the central signal" which should read "the central channel signal".

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US 6885900 B1).

Art Unit: 2615

5. Regarding claim 1, Rybicki discloses a apparatus for converting to multi-channel output from two-channel and using a MIC\_IN connector, a LINE\_IN connector, and a LINE\_OUT connector for outputting multi-channel sound effect, comprising:

a coder/decoder (CODEC) for coding or decoding sound signals so as to output surround left signal, surround right signal, left channel signal, and right channel signal (column 2 lines 35-45), input microphone signal, LINE\_IN\_L and LINE\_IN\_R signals (column 2 lines 46-57), and generate control signal (figures 1 and 2, item 38);

a MIC\_IN connector switch (figure 2, audio setting register 22 and drivers 30 and 32) for switching the MIC\_IN connector as an input means or an output means based on the control signal;

a first filter (capacitors as shown) for coupling surround signals to the MIC\_IN connector; and

a second filter (capacitors as shown) for coupling the microphone signal inputted by the MIC\_IN connector to the CODEC;

The embodiment of figure 2 does not disclose a third filter or resistor circuit as claimed.

In an alternate embodiment (figure 1) Rybicki discloses:

a filter (capacitors as shown) for sending LINE\_IN\_L and LINE\_IN\_R signals inputted by the LINE\_IN connector to the CODEC; and

a resistor circuit (figure 3) for coupling the surround left signal and the surround right signal to the LINE\_IN connector for output via a filter.

Although Rybicki does not expressly disclose use of multi-channel signals in excess of four, the examiner takes official notice that multi-channel signals with 6 or more channels were well known in the art. Namely standard such as 5.1 that included a central channel signal, and a low-frequency-effect signal were notoriously well known. It was also well known that using standards with more channels produced a more realistic and more enjoyable sound.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the two embodiments of Rybicki in order to output 6 channels. The motivation for doing so would have been to be able to output a higher number of channels, such as that as required by the 5.1 standard, in order to make more realistic and enjoyable sounds. Therefore, it would have been obvious to combine the embodiment of figure 2 with the embodiment of figure 1 to obtain the invention as specified in claim 1.

6. Regarding claims 6-8, Rybicki discloses input (28, 32) and output drivers (30, 34), as well as enabling these drivers when in use and disabling the drivers when not in use (column 2 line 58 to column 3 line 30).

Although Rybicki does not expressly disclose a plurality of DACs or ADCs, the examiner takes official notice that converters to and from analog audio signals to digital signals useable by computing systems were notoriously well known in the art. The motivation to provide such would have been to allow for analog signals readily usable by transducers, and digital signals readily usable by digital processors.. Using such

Art Unit: 2615

converters in input and output driver systems were also well known in the art. The motivation to do so would have been to do the least processing in the analog domain, minimizing error. Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to obtain the inventions of claims 6-8.

7. Claims 2-5, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US 6885900 B1) in view of Papadopoulos et al. (US 6266424 B1).

8. Regarding claim 2, Rybicki discloses does not disclose a bias circuit.

Papadopoulos discloses comprising a microphone bias circuit for biasing the microphone signal inputted by a MIC\_IN connector with a microphone bias signal (figure 2).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the bias circuit of Papadopoulos in the apparatus of Rybicki. The motivation for doing so would have been to obtain a microphone signal less prone to error. Therefore, it would have been obvious to combine Papadopoulos with Rybicki to obtain the invention as specified in claim 2.

9. Regarding claim 3, Rybicki discloses enabling drivers when in use and disabling the drivers when not in use (column 2 line 58 to column 3 line 30).

Art Unit: 2615

10. Regarding claims 4-5, Rybicki discloses control signals. Although Rybicki does not expressly disclose the use of NMOS transistors switching the control signals on and off, the examiner takes official notice that using NMOS transistors for switching functions was well known in the art. The motivation to do so would have been to use well known, standard, reliable components for switching controls. Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to obtain the inventions of claims 4 and 5.

11. Regarding claims 9-10, Rybicki discloses input (28, 32) and output drivers (30, 34), as well as enabling these drivers when in use and disabling the drivers when not in use (column 2 line 58 to column 3 line 30).

Although Rybicki does not expressly disclose a plurality of DACs or ADCs, the examiner takes official notice that converters to and from analog audio signals to digital signals useable by computing systems were notoriously well known in the art. The motivation to provide such would have been to allow for analog signals readily usable by transducers, and digital signals readily usable by digital processors. Using such converters in input and output driver systems were also well known in the art. The motivation to do so would have been to do the least processing in the analog domain, minimizing error. Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to obtain the inventions of claims 9-10.

Art Unit: 2615

**Conclusion**

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas Suthers whose telephone number is (571)272-0563. The examiner can normally be reached on 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

djs



VIVIAN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600